NET ASSESSMENT AND 21ST CENTURY STRATEGIC COMPETITION

Workshop Summary

June 29, 30, and July 1, 2021

Center for Global Security Research
LAWRENCE LIVERMORE NATIONAL LABORATORY

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Net Assessment and 21st Century Strategic Competition

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On June 29-30, and July 1, 2021, the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory (LLNL) hosted a workshop to examine the role of net assessment in understanding 21st century strategic competition. This session brought together more than 150 participants drawn across the policy, military, and technical communities from the United States and allied countries in Europe and the Indo-Pacific region.

Key Questions:

- What can net assessment contribute to understanding the challenges of the 21st century security environment and long-term strategic competition?
- What innovations are necessary to secure those benefits?
- What insights can be learned about shifting power balances and the future of strategic stability?

Key Take-aways:

1. There are many new demand signals for both "Net Assessment" and "net assessments." The former is the approach pioneered by Andy Marshall aimed at understanding long-term strategic competition and challenging assumptions driving policy and strategy in a cold war context. The latter is analysis that is comparative in character, examines dynamics among multiple actors, and explores challenges in multiple domains and at multiple levels (operational and strategic). In Washington, Brussels, London, and elsewhere, political and military leaders look increasingly to these techniques—often used interchangeably—as part of a broadly based effort to "out-think" competitors and to guide and accelerate adaptations to defense strategy and capabilities by taking a more strategic and longer-term view.

2. Despite these demand signals, the actual capacity to generate this type of analysis remains quite modest. Recent start-up activities at NATO and in the UK are not yet self-sustaining as they lack the necessary resources—fiscal, human, and organizational. In contrast, the U.S. Office of the Secretary of Defense's Office of Net Assessment is on a much more solid footing—though its contributions to near-term strategy development appear modest compared to the need. In general, these organizations struggle with the limited availability of experts experienced in this type of analysis and with the absence of a shared set of analytical methods.

3. The Community of Interest is divided over whether Net Assessment can deliver the needed net assessments. Some see legacy approaches as fully capable of delivering the needed strategic insights, while others argue that changes are necessary to account for the tripolar character of major power rivalry, the mix of cooperation and competition evident in these relationships, the more multi-domain character of 21st century military competition, and the prominent role of U.S. allies and other regional factors in competition and deterrence. The advocates of change argue for adapting Net Assessment along the following lines:
    - Supplement existing assessments of dyadic military balances with assessments taking a more holistic view of shifting tripolar and multipolar strategic relationships;
    - Supplement existing assessments at the operational level of war with assessments at the military strategic and grand strategic levels;
    - Supplement existing assessments of emerging challenges with assessments of possible solutions;
    - Supplement existing sponsor-specific assessments with more collaborative efforts aimed at generating cumulative insights across departments and allies;
    - Supplement existing highly classified assessments with assessments that can reach a much broader audience.

4. From a Russian perspective, the tripolar nuclear balance has improved over the last decade, though important risks remain. Russian military modernization has reduced Russian

leadership concerns about the future threat of the combination of U.S. ballistic missile defense and advanced conventional strike and about conventional imbalances in Europe. But the decade ahead looks uncertain to Moscow. Its military modernization has not eliminated concerns about future U.S. threats, its economy continues to lag with the burden of an autocratic political order and economic sanctions, and its leaders remain focused on how to protect strategic stability with and without arms control. The Asian theater may be increasingly troubling from a Russian perspective, as it contemplates both the prospect of possible deployments there of U.S. intermediate-range missiles and China's accelerating nuclear modernization.

5. From a Chinese perspective, the tripolar nuclear balance has been dynamic, with the main trend favorable for China's interest. The dynamic elements include the renewal of U.S. focus on extended nuclear deterrence in the region, as driven by the emerging North Korean threat to U.S. allies and to the United States, and intensifying U.S.-Russia rivalry. The main trend is the strengthening of China's deterrent through modernization, diversification, and adaptation to new requirements.

6. From a U.S. perspective, the tripolar nuclear balance is both dynamic and troubling. Growing uncertainties at the strategic nuclear level are paired with negative changes at the regional nuclear level. The growing coupling of force structure developments among the three foreshadows intensifying action-reaction cycles and arms racing. The deterioration of regional non-nuclear balances can be expected to increase allied interest in what more nuclear deterrence can contribute—at a time when nuclear modernization remains expensive and contentious, and the United States is speaking publicly of its desire reduce the role of nuclear weapons in deterrence strategy.

7. Tripolar multi-domain competition adds significant complexity to these net assessments. The leaders of Russia and China believe that the world became unstable in the "unipolar moment" of U.S. strategic predominance and that stability has been restored through their restorative actions, including their much stronger national hedges (the capacity for future competition). U.S. leaders perceive instead an erosion of stability resulting from such broadly based strategic competition, following from the preparations of Russia and China for regional conflicts with U.S.-backed allies.

8. The tripolar competition in the new domains is qualitatively different from the competition in their nuclear relationships. In the nuclear realm, Russia, China, and the United States compete to preserve assured nuclear retaliation (or parity, whether defined quantitatively or qualitatively). In the new domains, they seek "superiority," "dominance," or "supremacy." The result is new forms of instability. Whether these instabilities will do serious damage to the stability of mutual nuclear deterrence is an open question.

9. Regional deterrence balances matter too. After all, the most plausible pathways to major power war arise from regional contingencies. Looking back over the last decade, the shifts in both Europe and Northeast Asia have been unfavorable from the perspective of the U.S.

and its allies. Conventional balances have eroded, especially as the United States shifted from a two-war to a one-war strategy. Nuclear balances have deteriorated as Russia and China have pursued adaptations while the United States has clung to an extended deterrence posture crafted in a different, and much more benign, environment (a modest fleet of globally deployable dual-capable fighter-bombers). The pathway forward to 2030 is uncertain. Some in the expert community see a restoration of balance, as NATO may be entering a "restorative" or "transformative" phase while U.S. alliances in East Asia are "adapting to new challenges." Others anticipate at best holding steady. Still others predict a further erosion as political gridlock and populism in the democracies take a further toll on collective action.

10. At first glance, both Presidents Putin and Xi have reason to be satisfied with many tactical successes in their efforts to re-make the regional security orders in Europe and Asia. Putin has dismantled many elements of the prior European order, while Xi has re-asserted China's power and influence across the region. But their strategic success has proven elusive and is likely to remain so. Russia and China also have facets – demographics, internal bureaucratic politics, environmental concerns – which are mentioned but inadequately analyzed as potential weaknesses. Both have over-reached, generating significant new reactions by the United States and its allies and partners. Russia's direct interference in domestic political processes of the democracies has had a galvanizing effect, as has the "wolf warrior" diplomacy of China.

11. But the reactions of the United States and its allies and partners to this over-reach are only slowly converging and their overall strategy is still taking shape. A strategic approach requires simultaneously focusing on two dangerous near-peers while not neglecting one or two dangerous "rogue states." A strategic approach must include both military and political elements. The military component should be tailored to deter opportunistic aggression and to avoid unwanted competition. The political component should emphasize the soft power of the democracies, not least because Russia and China are destroying their own soft power machines. The pathway to an exit from enduring rivalry runs through the declining appeal of the Russian and Chinese models of social and political development, a falling out between Russia and China (as Russia rejects becoming a mere satellite to a rising China), and a strengthening of the resilience of U.S.-led order. Net assessments should encompass all of these elements.

Panel 1: The New Demand Signals

- What role can and should the net assessment methodology play in U.S. strategies to out-compete and out-think? What expectations have DoD leaders set?
- How have U.S. allies thought about the changing role of net assessment?

In Washington, London, Brussels, and elsewhere, political and military leaders look increasingly to net assessments as one element in a larger effort to "out-think" competitors and guide long-term adaptations to defense strategy and capabilities. The common demand signal driving such interest is a perceived need to engage in forward-looking assessments of the full range of "Blue" and "Red" strategies and capabilities to surface areas of advantage and disadvantage.

The United States has an established Net Assessment capability within the Office of Secretary Defense's Office of Net Assessment (ONA). In addition to its established functions, there are multiple other roles that ONA and net assessment methodology could play in helping DoD better understand longer-term U.S. strengths, vulnerabilities and asymmetries vis-a-vis China and other rivals. Net assessment could help characterize fiscal, technological, and strategic tradeoffs and inform planning and analysis across multiple time horizons, contributing to decisions about where the United States should place medium-term bets and hedge against an uncertain future. Net assessments could also inject a degree of humility into strategic planning by surfacing differences in how U.S. competitors think, plan and operate. In addition, net assessment efforts could help the United States better understand fluid deterrence and escalation dynamics and contribute to the development of planning scenarios, especially those involving grey zone competition.

In assessing competitive (Blue vs. Red) relationships, net assessment should also take into account the full range of U.S. partner (Green) capabilities and capacities. This is an area where significant gaps remain both analytically and operationally. All of these potential contributions are deemed necessary in light of the fiscal and programmatic constraints arising after the COVID-19 pandemic.

In recent years U.S. allies and partners have embraced net assessment approaches. However, they have done so in a manner that reflects their unique needs. The United Kingdom has stood up its own strategic net assessment capability following the findings of the 2015 National Security Strategy and Strategic Defence and Security Review, and the 2018 Modernising Defence Programme. Both reviews concluded that the UK faces a world of increasing, aggressive and persistent competition. Accordingly, the UK Ministry of Defence's Strategic Net Assessment unit was created to assess how the capability choices of friends and foes may affect all dimensions of the competition over the short, medium and long-terms. Strategic Net Assessment in the UK is seen as a way to boost "strategy-making advantage" by going beyond existing strategic approaches that are believed to reinforce status quo approaches.

NATO has also forayed into net assessments. NATO established a small net assessment capability in 2018 which has undertaken several assessments of the changing military balance in the region. Supported by a strong recommendation from the NATO 2030 Reflection Group, the alliance's net assessment capability will incrementally expand over the coming years, potentially focusing on a wider range of areas. Given NATO's unique identity as a political-military alliance of 30 member states, net assessment within NATO serves a role of a tool for the development of a unified strategic perspectives on threats and potential responses. The net assessments produced at NATO today focus on risks and potential threats from any potential direction to frame, conceptualize, and raise the Alliance's "strategic IQ" on key issues. Their role is not to advocate for policies or adjudicate among different Allies' views. For NATO, one major contribution of net assessment is that it can bring certain advantages and vulnerabilities to attention of Allies. The goal is to make allies better able to anticipate and plan for potential threats, rather than solely reacting to them.

Despite these demand signals, the actual capacity to generate this type of analysis remains modest. Recent efforts are not yet self-sustaining as they lack the necessary resources—fiscal, human, organizational—to produce assessments on every topic of interest for all who might desire them. The U.S. Defense Department's Office of Net Assessment is on a much more solid footing, although its contributions to near-term strategy development also appear modest compared to the need. In general, these organizations struggle with the limited availability of experts experienced in this type of analysis and with a lack of consensus on which analytical methods would produce the most compelling assessments.

Recent net assessment start-up activities also demonstrate tensions between the academic ideal of how a net assessment capability should be organized and the policy reality of how net assessments cells interact with their broader bureaucratic environments. Some believe net assessment offices are most effective when they are small and rely on external analytic support. But a lean net assessment function is also one likely to lack the resources to support an external analytic ecosystem. Such an ecosystem has long existed in the United States independent of ONA support, but this is not the case outside of the U.S. Net assessment cells are also likely to face strong pressure to use internal, classified sources and established, proprietary analytic methods to be seen as credible by assessment consumers. In theory, net assessment units should report directly to top decision-makers and should be independent from the daily priorities of the bureaucracy. In practice, there is a strong demand for a wide distribution of assessment products and significant interest in assessments that can help agencies address their day-to-day challenges. Decision makers also tend to demand strategic judgements and clear recommendations; there is often a demand for quick turnarounds. As a result, it is very difficult to do assessments that go beyond a timeframe of 3-5 years and near-time relevance. Finally, while some argue that the goals of net assessment should be to challenge status quo, the reality is that there is not much demand for challenging insights; the prevailing demand is for maintaining the status quo. Bringing net assessments into an alliance context is also challenging because classification issues and political sensitivities can disincentivize sharing products with allies.

Panel 2: Ensuring that Net Assessment is Fit for New Purposes

- Relative to other analytic techniques, what are the particular utilities of net assessment?
- How can and should the methodology be adapted to meet the requirements of defense planning and strategy development in the 21st century? What metrics and tools should be used?

A net assessment is a holistic, dynamic, structured comparison of the military capabilities of states in a competitive relationship in the context of particular objectives and areas of interest. It can also be characterized as a holistic study of the capability of one force to deal with another in specific contingencies. What makes net assessment unique and distinct from other analytic methods is its focus on an interactive Blue-Red relationship. For example, net assessment is not just concerned with each sides' capabilities, but also with how those capabilities would play out in various sets of circumstances. Net assessment methodology is also holistic as it incorporates not only quantitative but also qualitiative factors. It can benefit for information collected through different methods, including intelligence sources. War games can be thought of as evidence-collecting tools *for* net assessments. Net assessment also incorporate Red and Blue's perceptions of, and objectives in, different competitions. Changing trends in strategy, capabilities, and technologies over time are also roped in.

The Community of Interest is divided over whether Net Assessment can deliver the needed net assessments. Some see legacy approaches as fully capable of delivering the needed strategic insights. Others argue that to remain relevant, net assessments should evolve to account for greater technical and strategic complexity. Factors contributing to this complexity include the multi-domain character of 21st century military competition, the prominent role of U.S. allies and other regional factors in competition and deterrence, new tools for conducting net assessments, and wide interest in using net assessments not only for force planning purposes but also concept development and the generation of new strategic thought.

The advocates of change argue for adapting Net Assessment by supplementing existing assessments of dyadic military balances with assessments taking a more holistic view of shifting tripolar strategic relationships. A good net assessment could account for the complexity and tradeoffs of the relationships between the United States, Russia, and China all at once, rather than exclusively considering bilateral relationships. Emerging tools and methods will need to be utilized to sufficiently account for these relationships and the increasingly layered dynamics and new technologies that influence them. Additionally, net assessments must also consider Russia and China's own perspectives, especially because the long-term planning and strategy that net assessments try to achieve is in some ways already baked into both countries' institutional processes.

Net assessments should account for the more complex nature of strategic relationships today, including the coincidence of cooperation and competition. Analytic interest in competitive dynamics should not necessarily limit net assessments only to adversarial relationships.

Focusing solely on adversaries also risks overlooking that significant issues may arise from competing interests with allies as well. From this perspective, net assessments should incorporate allies in multiple ways. The intensity of military competition is likely to vary across different areas and domains. Some aspects of military competition may be more zero-sum than others, and getting what we want is not always a matter of denying an opponent what it wants. Assuming zero-sum relationships with competitors could therefore rule out potential win-win solutions.

The other argument for change is that net assessment should tackle broad range of challenges than in the past. Assessments at the operational level of war should be supplemented with assessments at the military strategic and grand strategic levels. Existing sponsor-specific assessments could be also supplemented with more collaborative efforts aimed at generating cumulative insights across departments and allies.

There is also an ongoing debate over whether net assessments ought to be more diagnostic or more prescriptive. While many net assessments are now purely diagnostic, it may be useful to start incorporating ways for those creating net assessments to take into account the information they have learned and make recommendations. Existing assessments of emerging challenges should be supplemented with assessments of possible solutions. After all, in diagnosing the problem, analysts are also getting new insights about the solutions.

As a step further, net assessment-style analyses and recommendations could be built into broader organizational and analytical processes. Net assessment should not be limited to a challenge function done by a small group within existing bureacratic structures. Net assessment should be a broad practice that is incorporated into overall strategic thinking. Likewise, existing highly classified assessments could be supplemented with more net assessments that can reach a much broader audience.

Panel 3: Nuclear Balances in a Tripolar Context

- From a quantitative perspective, how have U.S.-RF and U.S.-PRC nuclear balances, broadly defined, evolved over the last 20 years, and how might they evolve over the next 20?
- From a qualitative perspective, which shifts and asymmetries are most important and least important? Why?
- How have these shifts affected extended nuclear deterrence? How will they affect it?

From a Russian perspective, the tripolar nuclear balance has improved over the past decade. Russian military modernization has reduced Russian leadership concerns about the threat posed by U.S. ballistic missile defense and advanced conventional strike. Russia's relative improvement of the nuclear balance is one element of a broader tension between the U.S. perception of Russia as a declining power and Russia's self-image of a rising power that is an able competitor with the declining West. Still, the coming decade ahead looks uncertain to Moscow. Its military modernization has not eliminated concerns about future U.S. threats to its strategic deterrent, and Russia's economy continues to be weighed down by the twin burdens of an autocratic political order and economic sanctions.

Russian military thinkers and planners are consumed with forecasting and analyzing the future character of warfare. They emphasize that future wars will be dictated by the countries most capable of information superiority, aerospace combat, artificial intelligence, autonomy, and hypersonic weapons. They also recognize that innovation is central to credible strategic derterrence and effective warfighting in the future. These factors will significantly influence the Russian military's assessments of the emerging "correlation of forces and means," and will drive further evolution of Russia's operational concepts and system of strategic operations. Developments in these areas will have an impact on Russia's views on the nuclear balance and the military balance as a whole.

Russia's political and military leaders remain focused on how to protect strategic stability with and without arms control. So far, military planners in Moscow have benefitted both strategically and in force planning from the predictability provided by the New START treaty. Moscow, however, is able and prepared to hedge in case it fails in efforts to develop a new and favorable "strategic equation" through arms control. Russia may also be increasingly troubled by developments at the regional level in Europe and the Indo-Pacific as it contemplates possible deployments of the U.S. intermediate-range missiles to both regions. China's accelerating nuclear modernization would add to Russia's uncertainties.

From a Chinese perspective, the tripolar nuclear balance has been dynamic, and the main trend has been favorable for China. China's deterrent has strengthened over the past decade through modernization, diversification, and adaptation to new requirements. China has expanded its arsenal quantitatively and is on a good path to double its existing arsenal. The change has been even much more significant in qualitative terms. Beijing has improved survivability of its forces through investments in sea-based deterrent, extending the range of its missiles, and MIRV-ing

them to penetrate U.S. missile defenses. China has been expanding a range of theater nuclear missions through deployments of dual-capable DF-21 and DF-26.

These improvements, alongside China's modernization of its nuclear command, control, and communication systems and changes in alert posture raise concerns that China is moving away from a no first use policy. China could also be moving toward a launch on warning capability, which Beijing may see as compatible with no first use. Even though China has a long way to go to reach quantitative parity with the United States, from a qualitative perspective China has already reached a level of some strategic equivalency with the United States. The perception of strategic equivalence may in turn embolden Beijing to become more aggressive at the conventional level. China's qualitative flexibility also may heighten concerns about Chinese nuclear first use in the context of failed conventional aggression against Taiwan. These factors could fuel arms competition and lead to arms race and crisis instability.

From a U.S. perspective, the tripolar nuclear balance is both dynamic and troubling. Growing uncertainties at the strategic nuclear level are paired with negative trends at the regional level. Programmatic risk surrounding U.S. modernization could exacerbate these uncertainties; Russia and China are in a better place to further expand and diversify their respective arsenals while the United States will struggle to implement established programs of record. This unpredictability is further exacerbated by the consequences of Chinese and Russian investment in missile defense and counter-space technology, and growing uncertainity about the U.S. ability to shape future arms control architectures. The increasing coupling of force structure developments among the United States, Russia and China foreshadows intensifying action-reaction cycles and even potential arms racing dynamics.

There are also significant concerns about how tripolar dynamics would affect U.S. extended nuclear deterrence in Europe and the Indo-Pacific. Today, strategic forces are the stable foundation of U.S. extended deterrence guarantees. But future problems with strategic nuclear modernization may weaken this foundation and raise the salience of the strategic balance for allies. Both Russia and China are likely to further expand their theater nuclear forces, further solidifying their quantitative and qualitative regional nuclear advantages. In recent years, the United States and its allies have taken steps to strengthen regional extended nuclear arrangements, but more needs to be done to adapt to growing challenges. The steps to strengthen integration between the United States and its allies have been lagging in the Indo-Pacific in particular. Even in Europe, however, incremental improvements to the reliability of regional nuclear capabilities have not necessarily been matched by innovations in strategic concepts. In both Europe and in the Indo-Pacific, the United States has clung to an extended deterrence posture crafted in a different, and much more benign environment (i.e., a modest fleet of globally deployable dual-capable fighter-bombers).

In addition, the deterioration of regional non-nuclear balances is likely to raise questions about the role of nuclear deterrence in regional security in the future. This conversation may be uncomfortable for all sides given U.S. interest in the U.S. in reducing the role of nuclear weapons and the costs and political controversies surrounding U.S. nuclear modernization.

Panel 4: Tripolar Multi-domain Competition and Strategic Balance

- From a qualitative perspective, are relationships among Russia, China, and the United States becoming more or less stable? Why?
- What objectives guide the competitive strategies of each country? Superiority? Parity, whether quantitative or qualitative? "Second to none?" Something else?
- From a military perspective, is it possible to gain and maintain strategic advantage in the new domains in peacetime, crisis, and war?

From the Russian and Chinese perspectives, multi-domain capabilities help redress an unfavorable security environment created by American confidence and interventionism during the "unipolar moment." These capabilities put Moscow and Beijing in a better position to hedge against the United States should it seek to challenge their fundamental interests. Both countries have thought extensively about how to safeguard their interests in the regional context and have implemented strategies to achieve such goals.

From the U.S. perspective, Russia and China's efforts to redress strategic imbalances, including through preparations for regional conflicts with U.S. allies, are themselves a cause of instability. This perception is exacerbated by trilateral (U.S.-Russia-China) dynamics. Russia has focused its efforts on competing aggressively not just to impress the United States with its ability to fight effectively, but also to ensure Beijing appreciates its strength. There are also growing concerns about the United States's move away from two-regional-war strategy in a context of overlapping interests and deepening ties between Russia and China.

Potential drivers of instability in multi-domain competition include also nuclear multipolarity and changes to the offensive/defensive balance. The net effect of the strategic forces balance on competition in new domains, such as cyber and space, remains uncertain. Conversely, it is unclear how decisive actions in the new domains will actually be. One tool that could help with instability is arms control, but only if it is crafted appropriately.

The three countries' competitive strategies reflect their different objectives. Russian strategy is predicated on exploit weaknesses and asymmetric advantages to deter and win conflicts and prevail in political competitions with its adversaries. Russia's aim is to maintain a credible nuclear backstop and continue to pursue innovative breakthroughs to erode Western power, norms, consensus and confidence in political institutions. In contrast, China has a better hand to play in economic, demographic and technological terms. China would welcome asymmetric advantages, but it is also reasonable to expect Beijing to desire overall parity or even dominance over the United States in the long term. Nevertheless, several challenges could interfere with this trend, including demographic strains and the potential for economic stagnation. In general, while Russia focuses on undermining its adversaries, China is focused on building real strength and pursuing a dominant place in the international order by 2049.

Difficulties in understanding Russian and Chinese objectives may also be compounded by their desire to conceal and mislead outside observers in support of an information confrontation

strategy. This potential for deception makes it difficult to reconcile Russian and Chinese rhetoric with their military activities. While their leaders emphasize the need for "strategic stability," their concrete military investments and professional military literature suggest that their goal is to set conditions for success in a regional war, not to maintain a strategic balance.

The United States may view itself as a stabilizing status quo power, aiming to maintain the current international order, but its objectives are also unclear to Russia and China. This opacity is worsened by the shifting messages put forth by different U.S. presidents. For this and other reasons, therefore, assuaging Russian and Chinese fears seems beyond the United States' reach. For example, in the past, Russia rejected all U.S. proposals to assuage its fears about missile defense—even those based on earlier Russian proposals—in part because of the perception that Russia could benefit from a degree of insecurity on the part of the United States. Efforts by the United States to assuage Russian and Chinese threat perceptions may also be difficult or impossible because Russia and China feel inherently threatened by Western liberal political values, which are at odds with core elements of their regimes. Assuring them would require the West to recoil from its own values and give up on efforts to have some liberal values reflected in international institutions.

While it may be possible to gain advantage in new domains, such advantages may be fleeting. The U.S. once had dominance in space, but has been unable to maintain it. No country has achieved decisive and/or sustained dominance in cyberspace. Gaining advantage in the initial period of war through actions in new domains may also be short-lived as a conflict that all intend to be limited may nevertheless become a long war of attrition.

Even though Moscow's and Beijing's authoritarian systems may allow them to gain first-mover advantages in some areas of strategic competition, this advantage is undercut in the long run by a lack of checks-and-balances on strategic decisions. Both may also lack a way to learn from tactical mistakes. Democratic decision-making is often slower, but there are also often greater opportunities for alternative view points to be raised. Large-scale blunders happen, but these can involve groupthink and other failures, rather than features, of democratic decision making. The nature of authoritarian regimes can also enable both good and bad leaders to stay in power for extended periods, whereas leadership in democracies is often more fluid. The other source for comfort may be that rising powers historically fall into a trap where they think that an innovative technology in a new domain is going to prove decisive in undermining the hegemon power in more established domains. This almost never works out in favor of the rising power.

To secure effective deterrence in a multi-domain context, it remains imperative for the United States and its allies to shake the confidence of Russian and Chinese political and military leaders that their actions in new domains provide them any asymmetric advantage in conflict. Success during peacetime competition, crisis, and war depends also on recognizing that advantages in multi-domain wars will go those who grasp the character and structure of the conflict and how to apply the available tools to secure the interests at stake. From this perspective, the United States is still catching up, while China and Russia are ahead in gaining understanding of the structure of multi-domain competition and conflict.

Panel 5: The Regional Deterrence Balances

- Looking back over the last decade, have regional balances (of deterrence and of strategic influence) shifted favorably or unfavorably? How? Why?
- Looking ahead to 2030, are the regional deterrence balances likely to have shifted favorably or unfavorably from the perspective of U.S. allies? How? Why?

Regional balances of power have been shifting continuously for the last decade and are likely to continue to do so. In general, the trends have been unfavorable from the perspective of U.S. and allied security. However, the exact implications of these shifts depends on the region in question and on the strategies, aims, and capaiblities of the major players. Effective net assessments are critical for achieving and maintaining an advantageous balance of power, as they provide a dynamic view of adversaries' and one's own capabilities.

In Europe, NATO is finally beginning to reverse a decade of unfavorable trends produced by Russia's comprehensive military modernization, the difficulties for the Alliance in refocusing on collective defense after decades of out-area-operations, and the internal challenges to Alliance solidarity. While these factors put the alliance on unsure footing in Europe, the future is much less grim. Russia may be approaching the high-water mark of its military modernization, which presents opportunities for NATO to exert greater influence on the pace and character of any emerging military competition. The over €260 billion invested since 2014 in NATO defense improvements are also yielding improved operational capabilities. The U.S.' recent recommitment to the alliance and its values has revitalized and energized NATO as well. For the first time in 50 years NATO has developed a new deterrence and defense concept. The Alliance has also developed a warfighting concept to maintain its military edge during the next 20 years. Taken together, the balance in the coming years is likely to look more favorable for NATO.

However, more is left to do. Panelists argued to deter and defend against Russian capabilities, NATO should move beyond filling capability gaps and instead invest in "transformational" capabilities that would confer greater advantages. This includes NATO investments to enhance situational awareness, improve command and control, and develop and deploy conventional precision strike capabilities. Some of these capabilities remain politically controversial but have been judged militarily necessary. NATO should avoid uncritically mirroring Russian capabilities, but it should also not let concerns about potential action-reaction dynamics preclude fielding necessary defensive and deterrence capabilities. In reiterating its support for the dual-track approach of deterrence and dialogue with Moscow, NATO should invest equally in both tracks.

In Asia, the balance of power was relatively stable from the time of the armistice in Korea to the turn of the century. The 1990s were a critical turning point in several respects. First, the success of the U.S. military campaign against Iraq in 1991 awakened China's leaders to a new kind of threat to its regional interests: that of a technologically advanced, information-driven military power. When China's economy began to grow in the 1990s, Beijing recognized an opportunity to refocus its military efforts away from internal priorities and border defense to countering

U.S. interference along the Chinese maritime periphery. The outcome of two Taiwan Straits crises contributed to Beijing's sense of urgency.

In the last two decades, China has grown into the world's largest naval power, a credible nuclear power, a legitimate space power, and the largest trading nation on earth. Concurrent with China's expanded capabilities and ambitions, U.S. extended deterrence in East Asia is facing new strains. The balance of conventional forces has been shifting in China's favor. U.S. efforts to reverse this trend, such as the recent Pacific Deterrence Initiative, offer the promise of closing emerging caps in conventional capabilities. However, U.S. allies in the region remain uncertain about future U.S. capabilities to deter aggression. The are equally concerned about the U.S. *will* to do so. Concerns are also growing that the United States would face difficulty responding to a concerted gray zone campaign against Taiwan or other maritime interests. Even if the United States could deny China successful physical consequest of Taiwan, it may not be able to deter a major Chinese punishment campaign that would cripple the Taiwanese economy.

Panel 6: The Balance Between Contending Visions of European Order

- Is Russia making headway or losing ground on its project to re-make the European security and political order? By what metrics do we and Russia's leaders gauge progress?
- How should leaders of the trans-Atlantic community assess the competition between contending visions? Is the main trajectory positive or troubling? Why?

The Russian and American visions of European Security have diverged radically in the past 20 years. The United States and most European nations, including those of the former Soviet bloc, have approached European security on the basis of the 1990 Paris Charter, which proclaimed a "new era of Democracy, Peace, and Unity." The charter declared its signatories' "steadfast commitment to democracy based on human rights and fundamental freedoms; prosperity through economic liberty and social justice; and equal security for all our countries." This vision of European order is inimical to Russia's national and international security interests. Consequently, Russia sees strategic competition, both political and military, as a means to improve its influence on the continent while countering what it perceives as threats to its domestic political order. This reality is deeply challenging, but it is also a fundamentally different challenge from the competition during the Cold War. The stakes are less existential but more complex. For instance, Russian hybrid warfare and covert operations have blurred the lines between peace, crisis and war. Unlike the United States, Russia is eager to operate in the fuzzy boundaries between peace and war.

Nevertheless, Russia's approach to remaking the European order has been largely tactical. While there may be some foundational strategic principles associated with Russia's actions since the mid-2000s, there appears to be a significant amount of opportunism and reactive behavior. Russia's provocations since 2007—the suspension of the CFE treaty in 2007, the 2008 invasion of Georgia and interference in the Caucauses, the 2014 illegal annexation of Crimea, violation of the INF Treaty, recent actions in the Sea of Azov—have all been disruptive but have not resulted in widespread strategic gains for Russia. Even though Putin has succesfully dismantled many elements of the post Cold War security order, Russia has not succeeded in remaking European order in its image. In some ways, Russia has achieved the opposite. Moscow's actions have provoked a backlash and galvanized European support for countermeasures. NATO has come together behind a more robust military posture, reprising its focus on collective defense. Putin has also lost significant ground with European leaders as Russia's prestige has been tarnished by provocative actions.

Because of all these factors, the 2020s and 2030s are likely to be more difficult for Russia than 2010s. Still, much depends of the ability of the West to maintain the political will and unity to counter Russia's moves in the long-term. To do so, NATO needs to be vigilant in countering even incremental Russian provocations because these could, over time, have far-reaching impacts. The dilemma that the Alliance faces is between overreaction and complacency: overreaction can provoke Russia in ways that make it harder for the West to realize its goals,

but if Russian strategic moves go unpunished, Russia may become emboldened. Pushing back in some way, no matter how small the action, could have a stabilizing effect.

Over the next decade, the European security order will also be increasingly affected by a stronger Russia-China relationship. The two countries are working closer together because the alignment of their interest is real, not because the United States and its allies are driving Russia towards China. Still, the United States and its NATO allies should work more creatively to find new ways and means of identifying and driving the wedges between the two countries.

Panel 7: The Balance Between Contending Visions of Asian Order

- Is China making headway or losing ground on its project to re-make the Asian security and political order? By what metrics do we and China's leaders gauge progress?
- How should leaders of the Indo-Pacific assess the competition between contending visions? Is the main trajectory positive or troubling? Why?

China under Xi Jinping has invested extensively in remaking the political and economic order in Asia. In economic terms, China has attempted to wield its considerable weight as a producer of and a growing consumer to secure political concessions from South Korea, Australia, and others. In political terms, the Chinese Communist Party has attempted to highlight the virtues of China's domestic model—collectivism, state control, and autocratic efficiency—while highlighting the perceived weaknesess of the capitalist democracies. China has also aggressively moved to exert significant influence in key international institutions, aided in part by the U.S. political retreat from these institutions under the Trump administration.

Like Russia, China has had some tactical successes and some failures. For example, China's sanctioning of South Korea for its deployment of THAAD missile defenses induced South Korea to seek a limited détente. But South Korea has not changed course on missile defenses, and China has inadvertenly produced a bipartisan consensus in Seoul about the fundamentally competitive turn in the China-South Korea relationship.

China's attempt to wield influence also have not translated into strategic gains. For example, China's recent "Wolf Warrior" diplomacy has produced a strong backlash, alienating those who otherwise preferred to take a neutral stance toward China. Moreover, the appeal of the Chinese political model appears mixed within Asia. On the one hand, China has found a wide market for its surveillance and "techno-authoritarian" technologies. On the other hand, Asian governments appear to be picking and choosing which elements of the Chinese model they want to emulate. Asia's citizens want China's economic success but do not want to live in a Chinese-style one-party state. China's vaccine diplomacy efforts have also experienced a setback as the efficacy of China's indigenously developed vaccine has been called into question.

From the perspective of President Xi, China will have succeeded in its efforts to remake the region if China emerges as a leading political, economic and military power in the region by mid-century. Potentially challenges to realizing this vision abound on all three fronts. China's economy is in a critical moment, and it is not yet clear whether China will continue to grow into the ranks of the developed economies or whether China will remain stuck in the middle-income tier. Demographically, an aging population spells trouble both for Beijing's desire to transition the economy to one predominately based on domestic consumption. Militarily, China has enjoyed much more success, but China's military is also unproven. China's neighbors are also responding to China's military modernization with countermeasures of their own.

In regional-political terms, China's transition to a more competitive approach to the region has energized the Quad framework comprising the United States, Japan, Australia, and India. Australia and India in particular seem interested in a more overt response to China's military modernization and aggressive behavior. ASEAN countries are more mixed on China. Laos and Cambodia are China's closest ASEAN partners, while Myanmar, Thailand, and Malaysia are broadly sympathetic to China's approach to regional relations. Vietnam, Indonesia, the Philippines, Brunei, and Singapore are skeptical of China's ambitions and growing influence. These countries are loath to see China become the dominant power in the region, but they also do not want to be forced to choose between the United States and China. This is increasingly difficult because the geopolitics of Asia are now largely defined by the U.S.-China competition.

Russia and China are also deepening their cooperation, but it is more of an alignment of overlapping interests rather than a true alliance. Still, to pose a serious challenge to the United States and its allies, these two countries do not have to actively aid the other in a military confrontation with the United States. Both countries could aid each other indirectly or implicitly, for example by attempting to distract or tie down the United States in another region in the midst of a major crisis with the other power.

Developments on the Korean peninsula have underappreciated importance for the broader regional order. While South Korea relies on the United States for security guarantees, 25 percent of South Korea's trade balance is with China, and China enjoys strong economic and social influence in South Korea despite the recent friction in the relationship. Nevertheless, South Korea can no longer afford to attempt to remain outwardly neutral in the U.S.-China competition. The United States should attempt to impress upon Seoul the importance of issues besides Taiwan to South Korea's interests, such as human rights or maintaining freedom of navigation in the East and South China Seas. Ongoing developments in North Korea's capabilities should be continuously considered in the U.S. calculations of the security of its allies and the stability of the region in general.

While developing its strategy for competition with China, the United States has to take into account that countries in the region do not want to be forced to make a zero-sum choice between the United States and China. The Indo-Pacific countries would be more open to a U.S strategy of defending their rights for not to choose, which would contrast with China's insistence that countries pick China. The United States should also reinvigorate its public diplomacy efforts in the region in order to promote its vision of openness and self-determination in contrast to China's hierarchical vision.

Panel 8: Implications for Future Analytical Work

- Are the main trajectories positive or negative from the perspective of the U.S. and its allies? Why?
- What work is needed to improve understanding of key dynamics?

The nuclear, regional, and geopolitical balances are all dynamic and uncertain from the perspective of the United States and its allies. From the Russian and Chinese perspectives, improvements in the nuclear balance have increased their confidence in assured retaliation, playing on fears of limited attack and in shaping peacetime competition to their own advantage. From the U.S. perspective, this a double-edged sword. Greater Russian and Chinese confidence in credibility of their strategic deterrence may tamp down on crisis instability. But this comes at the expense of a potential erosion in the credibility of deterrence at lower levels of conflict. Uncertainty below the strategic nuclear level may in turn create parallel pressures in the United States and in allied countries to take a more competitive approach to nuclear and non-nuclear military balances.

Much also depends on how the United States approaches nuclear and non-nuclear force modernization. Allies will look to the U.S. for signs that it recognizes the multifacted political, strategic and military challenge posed by the Russian and Chinese military efforts. To the extent that the U.S. and its allies have awoken to these challenges and are taken steps to redress declines in the military balance, the trends are favorable. But the dynamism in the military balance also makes a conclusive assessment difficult.

There are several areas for further work on understanding key dynamics. These can be grouped into three categories: 1) better understanding of geopolitical factors, 2) better understanding of "trends in the trends," and 3) better understanding of the emerging character of war.

First, net assessment of the tripolar balance of influence remains challenging. Further work should therefore consider the factors that might comprise influence and identify metrics. More research is also necessary into how Russia and China conceptualize their own influence, and what key metrics factor into these assessments. There is also a need for better understanding how each side understands the relationship between strategic capabilities and strategic *capacity.* How well is each side able to translate its tools into an overall capability to influence geopolitical outcomes?

A related question is how does interdependence between the U.S. security commitments in Europe and in the Indo-Pacific affect net assessment. Though many variables of the changing regional power dynamics are specific to each region, the United States and its allies cannot approach Europe and Asia separately. China, and Asia more broadly, must be part of NATO's calculus. Similarly, U.S. and allied forces in Asia cannot discount Russia and Europe. Net assessments on both sides should account for the other in order to gain a more comprehensive understanding of vulnerabilities and capabilities.

Second, it remains unclear how net assessments could help identify discontinuities in trends in key balances. For instance, how should net assessments make sense of efforts to innovate and

develop game changing technologies? How should net assessments measure each side's ability to capitalize on innovations and translate these into influence at the political, strategic and operational levels?

Finally, participants identified several questions for further study on the changing nature of warfare and strategic interaction. These included:

- What factors matter most for the nuclear balance—second-strike capabilities or qualitative improvements? What metrics should guide net assessments of a nuclear balance? If we look at nuclear balance from the prism of the second strike capabilities and mutual vulnerability, the trajectories look relatively stable. If we look from qualitative perspective – that is how Red could use its expanding array of nuclear options to set the conditions for success in peacetime and wartime and Blue counter-moves – the trajectories look much less optimistic.
- What is the future character and structure of a conflict involving multi-domain capabilities? Will multi-domain capabilities create incremental improvements or a discontinuity? How should we adapt net assessments to help cut through the complexity surrounding cross-domain dynamics and the relationship of high-intensity conventional capabilities and gray zone competition?
- How do we translate military conceptual innovation into investment, exercises, and training? Once a military revolution is taking place, how should we capitalize on it? How do we do a net assessment of abilities of Blue, Green and Red to do so?
- How should we leverage net assessment for a greater integration and interoperability between the United States and its allies? How do we move from national net assessment capabilities to a shared allied capacity?

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